

# The Role of a Classification Society in the Shipbuilding and Ship Repair Industries



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## 1.0 INTRODUCTION

Malaysia is a growing maritime nation. Its Shipbuilding and Ship Repair (SBSR) industries are expanding at a rate that has caught the attention of the Malaysian government, which has now acknowledged its importance in the nation's industrial growth. Under MIGHT, the government has launched the "Shipbuilding and Ship Repair Industry Strategic Plan 2020" at the recently concluded LIMA 2011 in Langkawi.

The expansion of the SBSR industries in the past few decades has been the result of the collaboration, cooperation and involvement of various parties in the industries such as shipowners, shipyards, charterers, insurers, bankers and financiers, institutions of higher learning, government agencies, etc.

Classification societies have gotten involved as early as the 1950s, in then Malaya, with the classing of the Penang ferries. This involvement has been continuous, and continues to grow with the progress of the industries.

## 2.0 WHAT IS A CLASSIFICATION SOCIETY?

Classification societies are organisations that establish and apply technical standards in relation to the design, construction and survey of marine related facilities including ships and offshore structures.

From their creation to the present day, the role of classification societies is to inform all interested parties, through register books and classification certificates, on the condition of each ship classed so that insurers or stakeholders can assess the risk and set the premium or decisions accordingly.

To summarise, the role of classification societies is to classify ships according to the degree of confidence that the ship deserves, and convey this information to anyone with an interest through the Classification Societies' Register Books. The register books may have largely been replaced by websites, but the primary mission remains the same.

Classification societies conduct surveys during the construction of all ships that are to be classed by them to establish that the rules and regulations that they have published are being followed. A ship that is found in compliance at the time of the survey will be issued with a classification certificate.

## 3.0 A BRIEF HISTORY OF CLASSIFICATION SOCIETIES

In the second half of the 18th Century, marine insurers, based at Edwards Lloyd's coffee house in London, developed a system for the independent inspection of the hull and equipment of ships presented to them for insurance cover.

At that time, an attempt was made to 'classify' the condition of each ship on an annual basis. The condition of the hull was classified A, E, I, O or U, according to the excellence of its construction and its adjudged continuing soundness (or otherwise). Equipment was G (good), M (middling) or B (bad). In time, G, M and B were replaced by 1, 2 and 3, which is the origin of the well-known expression 'A1', which means 'first or highest class'.

The concept of classification caught on around the world. Bureau Veritas (BV) was founded in Antwerp in 1828, and moved to Paris in 1832. Lloyd's Register of British and Foreign Shipping was reconstituted as a self-standing classification society in 1834; rules for construction and survey were published the same year.

Registro Italiano Navale (RINA) dates back to 1861, while the American Bureau of Shipping (ABS) traces its origins back to 1862. The adoption of common rules for ship construction by Norwegian insurance societies in the late 1850s led to the establishment of Det Norske Veritas (DNV) in 1864. Germanischer Lloyd (GL) was formed in 1867 and Nippon Kaiji Kyokai (ClassNK) in 1899.

The Russian Maritime Register of Shipping (RS) was an early offshoot of the River Register of 1913. More recent foundations include the Yugoslav Register of Shipping [now the Croatian Register of Shipping (CRS)] in 1949, China Classification Society (CCS) in 1956, Korean Register (KR) in 1960, and Indian Register of Shipping (IRS) in 1975.

As the classification profession evolved, the practice of assigning different classifications has been superseded with several exceptions. Today, a ship either meets the relevant classification society's rules or it does not. As a consequence, it is either 'in' or 'out' of 'class'. However, each classification society has developed a series of notations that may be granted to a vessel to indicate that it is in compliance with some additional criteria that may be either specific to that vessel type or that are in excess of the standard classification requirements.

#### 4.0 SCOPE OF CLASSIFICATION

- A technical review of the design plans and related documents for a new vessel to verify compliance with the applicable rules;
- Attendance during the construction of the vessel in the shipyard by the classification society surveyor(s), and at the relevant production facilities that provide key components such as steel, engine, generators and castings, to verify that the vessel is constructed in accordance with the classification rules;
- Upon satisfactory completion of the above, the shipowner's request for the issuance of a classification certificate will be considered by the relevant classification society and, if deemed satisfactory, the assignment of class will be approved and a certificate of classification issued;
- Once in service, the owner must submit the vessel to a clearly specified program of periodical class surveys, carried out onboard the vessel, to verify that the ship continues to meet the relevant rule conditions for the continuation of class.

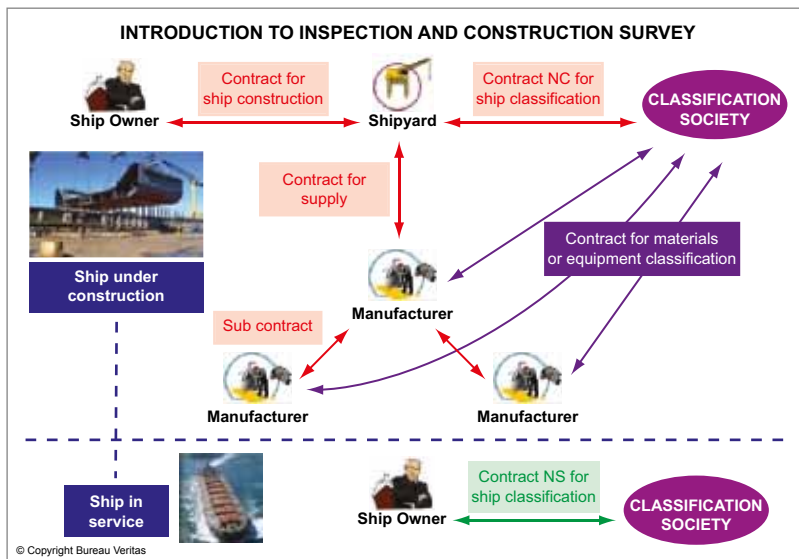


Figure 1: Overview of links between various parties

#### 5.0 CLASSIFICATION PROCESS FOR NEW CONSTRUCTION (SHIPBUILDING)

These are the activities that are commonly carried out during the new construction stage of shipbuilding:

1. **Request for Classification** – Contract between the classification society and the shipyard is signed, which details the scope of work agreed upon and an agreement that the shipyard would construct the ship to the Classification Rules and Regulations, with the intention to class it upon delivery.
2. **Plan Review** – Drawings and documents submitted by the designer appointed by the shipyard would be reviewed by the classification society's plan approval engineers.
3. **Construction Survey** – The NC surveyor will conduct a survey during the whole period of the ship's construction, to verify that it follows the approved drawings, and also attend tests performed at the shipyard's facilities or onboard the vessel based on the approved ITP (Inspection and Test Plan).

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- Attending Testing and Trial** – Various tests are witnessed by the NC surveyor (e.g. HT of pipes, leak tests, structural test of tanks, commissioning tests of equipment and related disciplines). The NC surveyor would also attend the sea trial.
- Issuing of Certificate** – Upon the satisfactory completion of surveys, BV will issue classification certificates and also statutory certificates on behalf of the Flag Administration (When authorised by the Flag Administration, a class surveyor will also conduct statutory surveys such as SOLAS, MARPOL, LOADLINE, TONNAGE AND ISM/ISPS).

**6.0 CLASSIFICATION SURVEYS FOR SHIP IN SERVICE**

Classed ships are subject to surveys for the maintenance of class. These are the surveys that are typical for most ships throughout its lifecycle:

- Class Renewal Survey
- Annual Survey
- Intermediate Survey
- Bottom Survey
- Tail Shaft Survey
- Boiler Survey
- Occasional Survey
- ESP

For these types of surveys, most owners would request for the activities to be carried out while the ships are at sea. However, following the survey findings made by the surveyor(s), the ship repair activities would then take place either onboard the ship itself or at the shipyard, depending on the type of repair(s) to be carried out on the ship. In its five-year classification cycle, a ship would normally be docked twice at the shipyard for its Bottom Surveys.

Ship repair activities are not restricted to the aforementioned surveys, but are more diversified. Repair works could also be due to accidents or damage to a ship, during sailing or while carrying out its operations at a port or loading terminal, or due to the owners' or charterers' requirements, modifications or additional facilities or equipment added to its original design. However, not all repair works would require the involvement of a class surveyor. The class surveyor would be involved when the defects or items being replaced or repaired are either classed items or related to statutory requirements.

**7.0 CONCLUSION**

Classification societies would continue its role in implementing the published rules and regulations in the SBSR industries in Malaysia in order to ensure that the standard of the activities and the quality of the final products delivered are to internationally recognised standards, with quality levels that are acceptable worldwide and are at least at par to other industrialised countries. ■